



Astronomy Club of Tulsa

Observer

March 2013



*Photo: Messier 42, The Orion Nebula, by Michael Blaylock. This is Mike's FIRST attempt at astrophotography! Nice job, Mike! And thank you!*

Permission to reprint anything from this newsletter is granted, **PROVIDED THAT CREDIT IS GIVEN TO THE ORIGINAL AUTHOR AND THAT THE ASTRONOMY CLUB OF TULSA "OBSERVER" IS LISTED AS THE ORIGINAL SOURCE.** For original content credited to others and so noted in this publication, you should obtain permission from that respective source prior to re-printing. Thank you very much for your cooperation. Please enjoy this edition of the Observer.



*Editor's Note: In previous editions of The Observer, I was able to put the NASA Space Place Newsletter into Publisher so it can be included in the newsletter. Sadly, due to a glitch in MS Publisher that will no longer allow me to put the Space Place Newsletter, which is a PDF document into it, all I will be able to do is provide the web link to it. The link is on Page 26.*

Inside This Edition:

Article/Item	Page
Calendar and Upcoming Events	3
Messier Marathon (Rescheduled) Announcement	4
Announcement for April Guest Speaker	5
For Sale	6
President's Message, by Owen Green	7
Treasurer's and Membership Report, by John Land	8
Images of PanSTARRS, by Michael Blaylock and Tamara Green	11
<i>"Putting PanSTARRS Into Perspective", by Tom Hoffelder</i>	12
The Secretary's Stuff, by Tamara Green	14
<b><u>"NITELOG - Norway InTErurban Local Observing Group"</u></b>	
By Tom Hoffelder	16
<i>"Your Daily Dose of Astonishment", by Diane K. Fisher</i>	23
NASA'S The Space Place Newsletter Link	26
Where We Meet	27
Officers, Board, Staff and Membership Info	28

# March 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1 Public Star Party	2 PSP Backup/ Groups
3	4	 5	6	7	8 Members' Night	9 Messier Marathon
10 DST Begins	11	 12	13	14	15	16
17	18	19	 20	21	22	23 Sidewalk Astronomy
24	25	26	27	 28	29 General Meeting	30
31 EASTER					GOOD FRIDAY	

## UPCOMING EVENTS:

Sidewalk Astronomy	Sat, Mar 23	Bass Pro	7:00 PM
General Meeting	Fri, Mar 29	TCC NE Campus	7:00 PM
Public Star Party	Fri, Apr 5	ACT Observatory	7:00 PM
Members' Night	Fri, Apr 12	ACT Observatory	7:00 PM
<b>MESSIER MARATHON</b>	<b>Sat, Apr 13</b>	<b>TUVA</b>	<b>See Article</b>

***(Please Note: The Messier Marathon is a Members-Only Event. Rescheduled from Mar 9 due to rain.)***

General Meeting	Fri, Apr 26	TCC NE Campus	7:00 PM
Sidewalk Astronomy	Sat, Apr 27	Bass Pro	7:00 PM

TUVA and the Astronomy Club of Tulsa invite all Club members and their families to join us  
at our



Annual Messier Marathon!

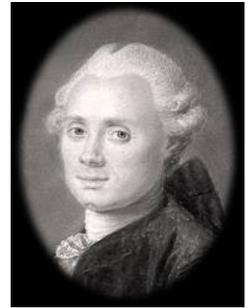
**Saturday, April 13, 2013**

**(Rescheduled from March 9 due to rain)**

Festivities begin around 4:30 –5:00 PM

TUVA Observatory, Mt. Feynman, Checotah, OK

Hosts: Ron and Maura Wood



The Annual Messier Marathon is a fun and challenging event in which we see how many of Charles Messier's famous objects we can find in one night. How many can you find? Come on out and try! Maybe you'll win the coveted David Stine Award!

***There will be a caravan going to TUVA.*** The caravan will meet in the parking lot of the Burger King on Elm Place in Broken Arrow (1600 N. Elm Pl., N. Elm Pl. and W. Queens Cir., West side of street). The caravan will leave Burger King promptly at 3:30 PM. For details contact Owen or Tamara Green at [darthnewo@yahoo.com](mailto:darthnewo@yahoo.com) or [astronomer.misstamara@yahoo.com](mailto:astronomer.misstamara@yahoo.com).

There will be a pre-marathon pot-luck dinner, so bring whatever favorite dish, snack or dessert to share!

***PLEASE NOTE: Due to the limited space available at TUVA and the pot-luck dinner that takes place before the Marathon, this event is for MEMBERS AND THEIR FAMILIES ONLY!!!!***

***ALSO PLEASE NOTE: This is an all-night event, and it takes place at a time of the year when it might be 73 degrees and sunny that afternoon, but turn freezing cold that night, so plan on bringing cold weather gear, blankets, pillows, etc.***

Hope to see you there!



# THE ASTRONOMY CLUB OF TULSA INVITES YOU TO

A VERY SPECIAL PRESENTATION

FRIDAY, APRIL 26, 2013

TULSA COMMUNITY COLLEGE,  
NORTHEAST CAMPUS

STUDENT UNION BUILDING 2, ROOM 1603

7:00 PM



Sansonthi Boonyotayan will give a presentation on two exciting topics:



“Operation Doomsday 2012: Scientific Challenge to the Mayan Prophecy” and



“Operation Eratosthenes: Measure Earth With One Stick”

*Per Mr. Boonyotayan: These two astronomical operations were conducted at Phupek Temple in Thailand, an ancient Khmer Temple located on a mountaintop +520 meters above sea level.*

Please join us for this exciting event.

Open to the Public





***2 telescopes for sale:***

10-inch Orion push-to Telescope

Never used.

***Interested? Call Ron Wood 918-474-3575.***

Would you know anyone interested in buying a Celestron NexStar 4 SE telescope? I also have a Powertank battery pack and a 1.25" eyepiece/ accessory

kit. I bought it as a distraction, but just could not get into it. Never even triangulated it. I spent about \$600.00, but will take much less.

Maybe

there's someone out there would put it to use.

Thank You

***Fred Straessle [fstraessle@cox.net](mailto:fstraessle@cox.net) 918 740 5326***



## President's Message

By Owen Green

Greetings Fellow Stargazers!

I hope that everyone's March has been going well. There is something very exciting to see in the sky this month. C/2011 L4, otherwise known as Comet PanSTARRS, is in the Western sky about 30 minutes after sunset, roughly 10 degrees off the horizon. Sadly, it is not as bright as everyone first thought it would be, but it is still there. Of course there is still Orion and Jupiter. They are the usual biggies this month.

Update on the President: My left shoulder is broken (stress fracture). I am currently going to physical therapy and will be doing so for the next couple of months to get the range of motion back in my arm; if that does not work I will need surgery. Loads of muscle relaxers and anti-inflammatory meds till then.

Clear Skies!

Owen Green, President



# Treasurer's and Membership Report

By John Land

**Astronomy Club of Tulsa 114 members including 14 new members**

**This month's new members are Joseph Koenig, Randy Hood, Robert Lawrence and Adam Morgan.**

**Club Accounts Mar 15, 2013**

**Checking \$ 2,791.31 Savings \$ 7,009.68 Investment account \$ 18,141.30 (Value Fluctuates with Market.)**

**NEWS NOTE:** Both Sky & Telescope and Astronomy have **free Digital subscriptions** available with print subscriptions or Digital subscriptions may be purchased separately. Contact their websites for details.

Membership rates for 2013 are as follows:

**Adults - \$ 45 per year** includes Astronomical League Membership

**Sr. Adult \$ 35 per year** for those 65 or older includes Astronomical League Membership

**Students \$ 30** with League membership **Students \$ 25** without League membership.

**Additional Family membership \$ 20** with voting rights and League membership.

**\$ 15** with voting rights but without League Membership

The regular membership allows all members in the family to participate in club events, but only **ONE Voting Membership** and one Astronomical League membership.

**Join Online** – Add or renew magazine subscriptions.

<http://www.astrotulsa.com/page.aspx?pageid=16>

**Magazine Subscriptions:** If your magazines are coming up for renewal, try to **save the mailing label** or renewal form you get in the mail. Forms are available on the club website.

**Astronomy is \$ 34 for 1 year or \$ 60 for 2 years.** [www.astronomy.com](http://www.astronomy.com)

To get the club discount you must go through the club group rate

**Sky & Telescope is \$33 / yr** [www.skyandtelescope.com](http://www.skyandtelescope.com)

Sky and Telescope also offers a 10% discount on their products.

Note: **You may renew your Sky & Telescope subscription Directly Online** without having to mail in the subscriptions to the club. **NEW SUBSCRIPTIONS** must still be sent to the club treasurer.

More from John Land:

**Friday Mar 29 7:00 PM TCC NE Campus**

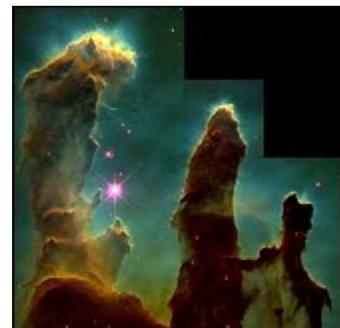
**Program will feature [Experiencing Hubble](#) –**

Understanding the 10 best images from the Hubble Space Telescope



This 12 part series on DVD describes the design and instruments of the Hubble Space Telescope.

Each presentation lays out the scientific background and importance of each image in a way that both novice and experienced astronomers can gain understand and enjoy. This month's meeting will focus on two of those images. [The Sagittarius Star Cloud](#) and [The Star Factory inside the Eagle Nebula](#). The Eagle Nebula image is better known as the *Pillars of Creation* image

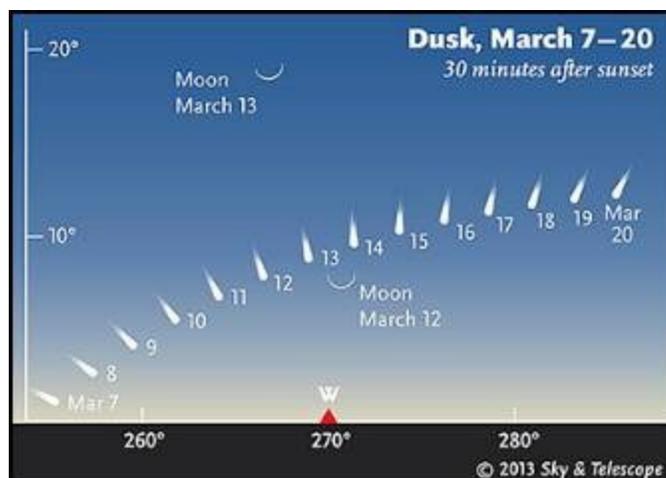


showing long billowing towers of interstellar dust spanked with the birth places of new Stars.

The long awaited **Comet PanSTARRS C/2011 L4** has finally become visible from the Northern hemisphere.

While not as bright as first predicted its still a nice comet but you'll need binoculars or a small wide field telescope to find it. The comet is currently between 1<sup>st</sup> and 2<sup>nd</sup> magnitude but the twilight sky makes it more difficult to see. It will remain visible near the western horizon for several weeks but will fade as it recedes from the Earth and the Sun.

There are numerous sites detailing where to locate the comet. ( Note: The illustrations of **appearance of the comet are much exaggerated** from its actual appearance in the sky. ) The club has no special sessions planned other than the scheduled nights.



**Tips for your comet Search:** Find an elevated site with a clear western horizon. **Tuesday March 12** may present a good opportunity to find the comet. The comet will be about 4 degrees to the left of the moon. You still have to search carefully for a very thin 30 hour old lunar crescent less than 10 degrees above the western horizon. ( Your fist held at arm's length is about 10 degrees wide ) A typical pair of sports binoculars has a field of view of 5 to 7 degrees. Pick out some horizon landmarks to mark your directions. Start looking about 10 degrees south of **due west** and SLOWLY scan one field at a time along the horizon moving North ( to your right ) Take time to examine the whole field of view. Then move up half a field of view and slowly scan back south. Repeating your sweeps until you are about 15 degrees up. Then start back down again. Be patient repeating your pattern again and again as needed. On March 12 once you find the moon place it at the 3 o'clock position on the edge of your view and search that area for the comet. On Mar 13 the comet will be about 10 degrees below the moon.

*More from John Land, Ct'd.*

The comet will be visible in our western skies for several weeks so if you don't succeed keep trying. Some resource sites.

This week's sky at a glance – has a day by day chart of the comet

<http://www.skyandtelescope.com/observing/ataglance>

<http://www.skyandtelescope.com/observing/home/Spot-Comet-PanSTARRS-in-Twilight-196688441.html>

Sky and Telescope also has an interactive sky map but requires registration.

<http://spaceweather.com/> Has been running daily images and updates on the comet for several weeks as it moved from the southern skies into the northern sky.

YouTube Video with history of the comet. – Note: This video was made before current observation data.

<http://www.youtube.com/watch?v=OZlenAvqLCI>



**Comet PanSTARRS – Mar 11, 2013 - 8:03 PM**

110 mm Vixen scope with 25 mm plossol projected Afocal at 800 ASA

After about 30 minutes of careful searching, I finally located the comet with

10 X 60 binoculars hugging the western horizon at 8:02 PM. Sunset was 7:27 PM. It was about 6 degrees above the horizon and Azimuth 265 degrees.

The nucleus was bright with nice short tail and some visible detail.

Comet looked much better than image shows.

Image by John Land

## A couple more images of Pan-Starrs!



Image credit: Michael Blaylock

This is another stunning image of Comet Pan-STARRS, taken by Michael Blaylock. Mike tells me that this one of his FIRST attempts at astrophotography!



Image credit: Tamara Green

And here is my own attempt, taken at TASM on Mar 13. The tiny comet is just barely visible to the left of the day-old Moon.

# Putting PanSTARRS Into Perspective

*by Tom Hoffelder*

Mar 13, 2013:

Cool comet pic on Spaceweather: <http://spaceweather.com/>

Being a little curious about how it compares to a couple of my old photos, I created the attached. As you know, the moon is 1/2 degree, the Pleiades approx 1 degree and Delphinus 6 degrees from nose to tail, so the scale should be close.



S&T posted a similar one I did for them, using the PanSTARRS photo they had up this morning.

<http://www.skyandtelescope.com/community/gallery/celestial/3441096.html> 3.13.13

Mar 18, 2013:

Better than nearly all of the 122, but not nearly as good as the four really good ones. Can't always get what you want, but might get what you need. Quit easy naked eye actually, once it got within a few degrees of the horizon and the sky was darker.

#	NAME	DESIG	DATE	MAG	DIA (")	TAIL	LOCATION	COMMENTS
113	Lulin	07N3	2/17/2009 & 3/24	6	15	1	Tolland	
114	Christensen	06W3	4/28/2009	10	5	---	Tolland	
115	Wild 2	81P	4/11/2010 & 5/15	10	3	---	Tolland	
116	McNaught	09K5	4/12/2010 & 5/15	8	5	---	Tolland	
117	McNaught	09R1	5/21/2010	8	5	---	Tolland	
118	Garrard	09P1	6/?/2011-5/17/12	7	5	---	Tolland/Nrway	
119	LINEAR	11F1	7/10/2012-9/11/12	11	5	---	Norway	kenton
120	Hergenrother	168P	10/11/12-11/06/12	9.5	2	0.1	Norway	
121	LINEAR	12K5	01/02/13-01/07/13	8.5	10	---	Norway	
122	PanSTARRS	11L4	03/17/13-	1		2	Norway	naked eye ~1 hr after sunset (wind chill was 0!)
123								



# The Secretary's Stuff

## By Tamara Green

### **ASTRONOMY CLUB OF TULSA – MINUTES – GEN. MEETING FRI FEB 22, 2013**

#### **PRESENT:**

Lee Bickle, VP

Tamara Green, Sec'y.

John Land, Treasurer

Stan Davis, Board

Michael Blaylock, Board

James Taggert, Facilities Manager

#### **NOT PRESENT:**

Owen Green, President

Mandy Nothnagel, Board

Jody Ray-Fleetwood, Board

Tony White, Board

Jennifer Jones, Webmaster, Groups

The meeting was held at Tulsa Community College, Northeast Campus. There were 26 attendees.

#### **WELCOME AND INTRODUCTION:**

Lee called the meeting to order at 7:00 PM and welcomed all attendees. He then introduced our guest speaker and turned the floor over to him.

#### **PROGRAM:**

Henry Bradsher, BAHS. "Low Luminosity Planetary Nebulae of the Small Magellanic Cloud"

#### **OFFICERS'/STAFF REPORTS:**

**PRESIDENT** – Not present due to illness, no report.

**VICE PRESIDENT**- Lee said that Owen was ill, asked Tamara if he wanted to have a board meeting soon, Tamara said she would ask Owen. Lee and John got some publicity for the Club via Channel 6 about the recent meteor.

**SECRETARY** – Tamara said that if anyone wants a copy of the minutes from the January meeting to email her. She then discussed the upcoming Messier Marathon and the plans for the caravan, which she is leading.

**TREASURER** – John reported that we got 5 new members from the recent TASM event. We have 13 new members, for a total of 118. We are OK financially. John asked about Sidewalk, but Tamara said to get with Lee if you want to help, as she did not feel that Owen would be well enough to go. Tamara said she may or may not be there.

**FUNDRAISING** – Lee talked to Catherine Kahbi, she mentioned that we could maybe do another garage sale fundraiser. She did not say whether or not she wanted to still be fundraising chair, she said she thought it was only for one year. If anyone is interested in being fundraising chair, contact Owen.

*The Secretary's Stuff, Ct'd.*

**OBSERVING** – Tamara reported nobody has submitted log work for her to send to the AL, but to get log work to her if you have completed a project so she can get your work sent off for a certificate and pin.

**GROUPS** – Jennifer Jones not present, no report.

**FACILITIES** – Lee introduced James Taggart, our new facilities manager. (Christopher Proctor stepped down.) James did not have any report, other than that he is going out tomorrow to look at the locks.

**PR/OUTREACH/SIDEWALK** – On behalf of Owen, Tamara reported that those who want to go out to Bass Pro can do so, but Owen won't be there due to illness. She said she may or may not be there.

**NIGHT SKY NETWORK** – Teresa Davis not present, no report.

**OTHER BUSINESS:** Ann announced that she has pamphlets for the Nebraska Star Party for those who are interested. August 4-9 are the dates. The Kansas City club will be presenting a program at the Selman Living Laboratory, on June 8.

**Lee adjourned the meeting at 8:42 PM.**

# NITELOG - Norway INTErurban Local Observing Group

by Tom Hoffelder

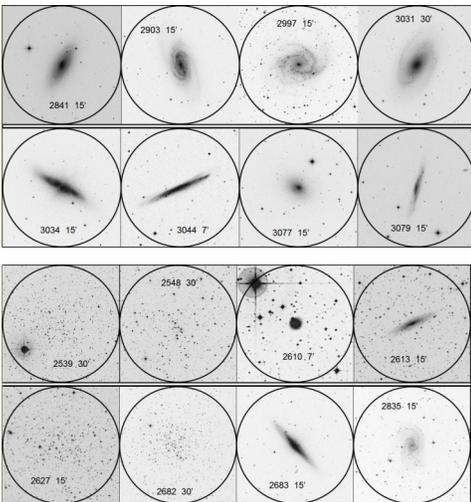
**OBSERVING:** For those in Maine, the Twitchell Observatory will be open on Monday the 4th at 7:30, weather permitting. I may or may not be there, depending on when my brother in Indiana taps our maple trees. There are two types of March Madness (maybe three if syruping is included), the applicable one here of course being the Messier Marathon. However, I have found April to be better in New England, both in regard to weather and the number of objects, especially when new moon is early in the month as it is this year. For those "southerners" who receive this and are planning a March marathon, my search order list is attached. Another problem with March this year is that Daylight Savings Time starts on the night of the Marathon (9th/10th), so you'll lose an hour of observing. **(Just kidding again!!!)**



For observers near 40° north latitude, Comet PanSTARRS may be a naked-eye object when it emerges from the glare of sunset in early March. It will fade in the following weeks as it moves northward, still low. The tails of the comet symbols here point away from the Sun. The actual tail will probably be longer and curved — or perhaps barely visible at all.

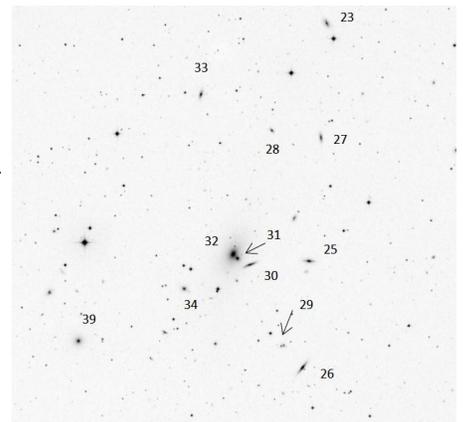
**COMETS:** 273P/Pons-Gambart will be a mag or so dimmer this month than last, maybe 10th, but high enough to observe by around midnight. PanSTARRS will be 3rd to 4th mag, however too close to the sun for any real observing. S&T apparently doesn't agree, per their attached figure. I love the "Don't expect" part. Note that after the 12th, for about two weeks, moonlight will be a factor also. I'm waiting for April, when it will be down to 5th mag, but within a few degrees of M31 during our northern Marathon.

**PLANETS:** On the first Jupiter is too low for observing by midnight, which is about the time Saturn is high enough for viewing. As always, bump those times up by two hours for the end of the month. Saturn is looking good, with the rings tilted about 18 degrees. Once Jupe is this far (3 months) past opposition, I don't bother with the shadows. However, Io's shadow will be there from 5:51 to 8:03 on the evening of the 4th, so those going to Twitchell might want to arrive a little early.



**STARS:** Three carbon stars, B-V ranging from 3.2 to 4.1, one triple and five doubles.

**THE GOOD STUFF:** Five open clusters (2 M's), one planetary, and twelve galaxies, including the fabulous M81/82 pair! (Maybe twice twelve, depending on how many you can see around NGC 2832.)



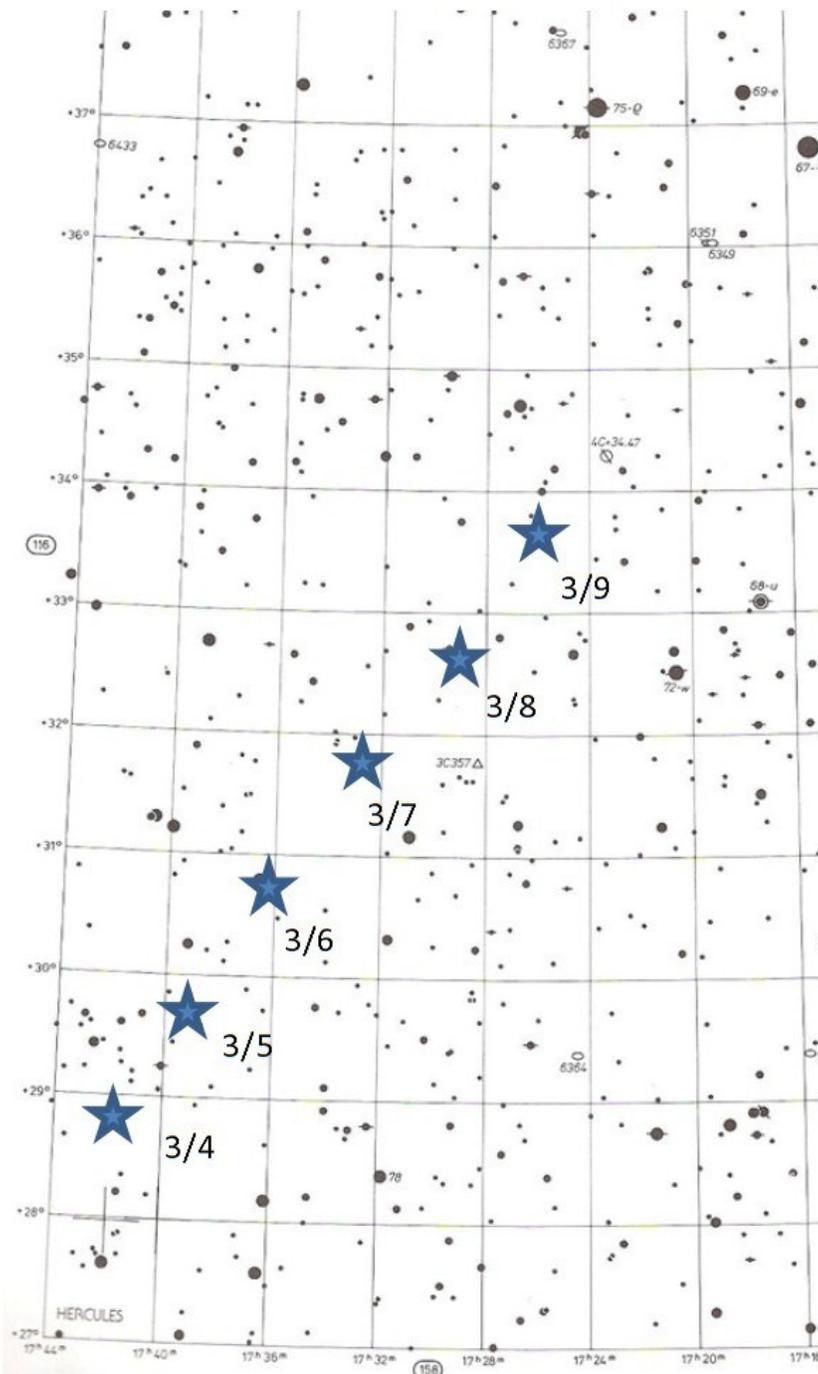
**SUPERNOVA:** At mag 11.5, SN 2013aa

is about as bright as they (extragalactic ones) get. The problem, for us northerners, is that it is in NGC 5643, at a -44 declination, which means anyone north of about 36 degrees latitude has to be content with photos. As soon as 2013aa was confirmed to be a supernova, I sent the info to those NITELOG people that could see it. One of them immediately went to work recording it and achieved an excellent result: <http://www.flickr.com/photos/snimages/8487929472/>. Check it out and read his account below the photo - thank you Bill Williams!

**QUESTIONS:** As always, questions and comments are welcome!

tom hoffelder  
[rocksnstars@gmail.com](mailto:rocksnstars@gmail.com)

*Come with me now, Pilgrim of the stars,  
For our time is upon us and our eyes  
shall see the far country  
and the shining cities of infinity ~ Robert Burnham, Jr.*



Finder Chart for Comet 273P (Pons-Gambart)

3/4					3/9				
SS	CTE	NTE	ATE	MR	SS	CTE	NTE	ATE	MS
17:35	18:04	18:37	19:11	01:38	17:41	18:10	18:44	19:18	-

Comet	ra <sup>1</sup>	dec <sup>1</sup>	star	n/s	e/w	n/s/ day	e/w/ day	mag <sup>1</sup>	mag <sup>2</sup>	uran #	date*
273P/Pons-Gambart	17 41.8	+28 47	μ Her	1.0 N	1.0 W	1.0 N	0.6 W	10	14	116	3/4
273P/Pons-Gambart	17 25.8	+33 39	ρ Her	3.6 S	0.5 E	1.0 N	0.8 W	10	14	115	3/9

<sup>1</sup>from <http://www.aerith.net/comet/future-n.html>

\*at 7 PM

<sup>2</sup>from <http://www.minorplanetcenter.net/iau/Ephemerides/Comets/>

Object (Type)	ra	dec	star	n/s	e/w	Mag*/ (# of Stars)	Size (')/ Sep (")	Spect/ M# or H#	Dist (ly)	Ura- no I Page	Comment [B-V] (optimum x)
X Cnc	08 55.4	+17 14	δ Cnc	0.9 S	2.6 E	6.2-7.5		CII		142	B-V=3.2
T Cnc	08 56.7	+19 51	δ Cnc	1.7 N	2.9 E	7.8- 10.6		N		142	B-V=4.1
Y Hya	09 51.1	-23 01	39 Hya	8.2 S	0.1 W	6.9-9...		C		323	B-V=3.8
ζ Cnc	08 12.2	+17 39	-	-	-	5.6,5.9 ,6	0.7,5. 8	F8,G0, dG2	70	140	
ι Cnc	08 46.7	+28 46	-	-	-	4.5, 6.5	30	G8, A3		102	
57 Cnc	08 54.2	+30 35	prev	1.8 N	1.8 E	6, 6.5	1.5			102	
27b Hya	09 20.5	-09 33	α Hya	0.9 S	1.8 W	7, 9	9.6	F2, K2		278	
Σ1340	09 22.7	+49 35	θ UMa	2.2 S	1.7 W	6.5, 8.5	6.2			44 (ni)	2854/6/7 0.5 SE
ΟΣ200	09 25.0	+51 45	θ UMa	0.1 S	1.2 W	6.5, 8.5	1.6			44 (ni)	2841 0.9 SW
NGC 2527 (OC)	08 05.0	-28 09	ρ Pup	3.8 S	0.5 W	(50)	10	H30-8	3600	320	

Table continued on next page

NGC 2548 (OC)	08 13.7	-05 45	ζ Mon	2.8 S	1.6 E	(80)	30	M48	3100	230	
NGC 2539 (OC)	08 10.6	-12 49	prev	7.0 S	0.8 E	(150)	15	H11-7	5900	275	
NGC 2610 (PN)	08 33.4	-16 09	9 Hya	0.3 S	2.0 W	12.7	0.7	H35-4	15,600	276	
NGC 2613 (Sb)	08 33.4	-22 58	ρ Pup	1.3 N	5.9 E	[12.6]	6X1	H266-2	54M	321	
NGC 2627 (OC)	08 37.3	-29 57	γ Pyx	2.3 S	2.8 W	(40)	9	H63-7	8200	363	
NGC 2682 (OC)	08 51.3	+11 48	α Cnc	0.1 S	1.8 W	(65)	25	M67	2700	187	
NGC 2683 (Sb)	08 52.7	+33 25	ι Cnc	4.7 N	1.2 E	[12.8]	9X2	H200-1	30M	102	
NGC 2832 (E2)	09 19.8	+33 45	α Lyn	0.7 S	0.2 W	[13.8]	3X2	-	275M	103	+ 11 NGCs +?
NGC 2835 (SBc)	09 17.9	-22 21	G Hya	-	2.2 W	[13.8]	6X4	-	40M	323	
NGC 2841 (Sb)	09 22.0	+50 59	θ UMa	0.7 S	1.8 W	[12.8]	8X3.5	H205-1	50M	44	
NGC 2903 (SBbc)	09 32.2	+21 30	ε Leo	2.3 S	3.1 W	[13.3]	12X6	H56-1	32M	143	
NGC 2997 (SBc)	09 45.6	-31 11	α Ant	0.2 S	8.9 W	[13.7]	9X7	H50-5	45M	365	
NGC 3031 (Sb)	09 55.6	+69 04	α UMa	7.3 N	7.0 W	[13.0]	25X11	M81	12M	23	
NGC 3034 (Sd)	09 55.9	+69 41	prev	0.6 N	0.1 E	[12.7]	11X4	M82	12M	23	
NGC 3077 (Sd)	10 03.3	+69 44	prev	0.9 S	0.6 E	[13.3]	5X4	H286-1	7M	23	
NGC 3044 (SBc)	09 53.7	+01 35	α Sex	2.0 N	3.6 W	[12.9]	4.7X0.7	H254-3	65M	234	
NGC 3079 (SBc)	10 02.0	+55 41	υ UMa	3.3 S	1.6 E	[13.2]	8X1	H47-5	65M	45	3073 0.2 W

\*DSS image

\*[Surf Brtnss for GX's] -

ni=shown but

mag per square arcmin

not identified

NITELOG, by Tom Hoffelder, Ct'd.

Tom's Messier Search Sequence:

M#	From	Const	Sweep (deg)	Type	Mag	Size (')	Time	Comments
77	d	Cet	0.3 S / 0.8 E	GX	10.5	6x5		
74	h	Psc	0.4 N / 1.3 E	GX	10.5	10x9		
33	a	Tri	1.0 N / 4.0 W	GX	7.0	65x35		
31	m	And	2.8 N / 2.6 W	GX	4.5	160x35		Andromeda Galaxy
32	prv	---	0.4 S / -----	GX	10.0	3		
110	prv	---	0.8 N / 0.4 W	GX	10.0	10x4		
52	b	Cas	2.4 N / 5.1 W	OC	8.0	12		
103	d	Cas	0.5 N / 1.0 E	OC	7.0	5		
76	f	Per	0.9 N / 0.2 W	PN	12.0	2x1		Little Dumbbell Nebula
34	g	And	0.4 N / 6.9 E	OC	6.0	20		
45	---	---	---	OC	---	75		Pleiades
79	b	Lep	3.8 S / 0.9 W	GC	8.5	3		
42	---	---	---	DN	---	60		Orion Nebula
43	prv	---	0.1 N / -----	DN	---	20x15		
78	z	Ori	2.0 N / 1.5 E	DN	---	8x6		
1	z	Tau	0.9 N / 0.7 W	SR	8.5	6x4		Crab Nebula
37	q	Aur	4.7 S / 1.6 W	OC	6.0	20		
36	prv	---	1.6 N / 3.2 W	OC	6.5	12		
38	prv	---	1.7 N / 1.5 W	OC	7.0	20		OC NGC1907 0.5S/0.2W
35	1	Gem	1.1 N / 1.1 E	OC	5.5	40		OC NGC2158 0.3S/0.4W
41	a	CMA	4.0 S / 0.4 E	OC	5.0	30		
50	q	CMA	3.7 N / 2.1 E	OC	7.0	16		
47	g	CMA	1.2 N / 8.0 E	OC	4.5	25		OC NGC2423 0.8N
46	prv	---	0.4 S / 1.1 E	OC	6.5	25		PN NGC2438 0.1N of cntr
93	x	Pup	1.0 N / 1.1 W	OC	6.5	25		
48	z	Mon	2.8 S / 1.6 E	OC	5.5	30		
44	d	Cnc	1.6 N / 1.0 W	OC	4.0	60		Beehive Cluster

NITELOG, by Tom Hoffelder, Ct'd.

67	a	Cnc	0.1 S / 1.8 W	OC	7.5	15	
81	h	UMa	6.0 N / 2.2 E	GX	8.5	20x10	
82	prv	---	0.6 N / 0.1 E	GX	9.5	9x4	
108	b	UMa	0.7 S / 1.4 E	GX	11.0	8x1	
97	prv	---	0.7 S / 0.4 E	PN	12.0	3	Owl Nebula
109	g	UMa	0.3 S / 0.6 E	GX	11.0	6x3	
106	c	UMa	0.5 S / 5.6 E	GX	9.5	19x7	
40	d	UMa	1.0 N / 0.9 E	DS	9.0	50" sep	GX NGC4290 0.2W (13th mag)
95	a	Leo	0.2 S / 8.7 E	GX	11.0	6x4	
96	prv	---	0.1 N / 0.7 E	GX	10.5	5x4	
105	prv	---	0.7 N / 0.2 E	GX	11.0	2	GX NGC3384 0.1NE (11.5 mag)
65	q	Leo	2.3 S / 1.2 E	GX	10.5	7x1	
66	prv	---	0.1 S / 0.3 E	GX	10.0	8x2	GX NGC3628 0.6 N
51	h	UMa	2.1 S / 3.0 W	GX	10.0	10x5	Whirlpool Galaxy
63	prv	---	5.2 S / 2.7 W	GX	10.0	10x5	
101	h	UMa	5.0 N / 2.3 E	GX	8.5	20	
94	a	CVn	2.8 N / 1.0 W	GX	9.5	5x3	
3	b	Com	0.5 N / 6.6 E	GC	7.0	10	
53	a	Com	0.6 N / 0.7 E	GC	8.5	3	
64	a	Com	4.2 N / 3.1 W	GX	9.0	6x3	Blackeye Galaxy
98	b	Leo	0.3 N / 6.0 E	GX	11.0	8x2	
99	prv	---	0.5 S / 1.2 E	GX	10.5	4	
100	prv	---	1.4 N / 1.0 E	GX	10.5	5x4	
85	prv	---	2.4 N / 0.5 E	GX	10.5	2	GX NGC4394 0.1 E (12.5 mag)
84	o	Vir	4.2 N / 4.8 E	GX	11.0	1	GX NGC4388 0.3SE (12th mag)
86	prv	---	---- / 0.3 E	GX	11.0	2x1	9 GX's in one degree field
88	prv	---	1.5 N / 1.5 E	GX	11.0	5x2	
91	prv	---	0.1 N / 0.8 E	GX	11.5	4x3	
49	o	Vir	0.7 S / 6.1 E	GX	10.0	2x1	
60	e	Vir	0.6 N / 4.5 W	GX	10.5	2	GX NGC4647 0.1 NW (12th mag)
59	prv	---	0.1 N / 0.4 W	GX	11.5	2x1	
58	prv	---	0.2 N / 1.1 W	GX	11.0	4x3	
90	prv	---	1.3 N / 0.2 W	GX	11.0	7x2	
89	prv	---	0.6 S / 0.3 W	GX	11.5	1	
87	prv	---	0.2 S / 1.2 W	GX	11.0	2	GX NGC4478 0.1SW (12th mag)
61	h	Vir	5.1 N / 0.5 E	GX	10.5	5	
104	h	Crv	4.6 N / 1.9 E	GX	9.5	6x2	Sombrero Galaxy
68	b	Crv	3.4 S / 1.2 E	GC	9.0	3	
83	p	Hya	3.2 S / 6.3 W	GX	8.5	10x8	
102	i	Dra	3.2 S / 2.6 W	GX	11.5	2x1	GX NGC5907 0.6N/1.4E
5	a	Ser	4.3 S / 6.4 W	GC	7.0	12	
13	h	Her	2.5 S / 0.2 W	GC	7.0	10	GX NGC6207 0.5NE (11.5 mag)
92	p	Her	6.3 N / 0.4 E	GC	7.5	8	
12	d	Oph	1.7 N / 8.2 E	GC	8.0	9	
10	prv	---	2.3 S / 2.4 E	GC	7.5	8	
14	b	Oph	7.8 S / 1.5 W	GC	9.5	3	
107	z	Oph	2.5 S / 1.2 W	GC	10.0	2	

NITELOG, by Tom Hoffelder, Ct'd.

9	h	Oph	2.8 S / 2.1 E	GC	9.0	2	
80	d	Sco	0.4 S / 3.9 E	GC	8.5	3	
4	a	Sco	0.1 S / 1.3 W	GC	7.5	14	
19	a	Sco	0.2 N / 7.5 E	GC	8.5	4	
62	prv	---	3.8 S / 0.3 W	GC	8.0	4	
57	b	Lyr	0.3 S / 0.8 E	PN	9.5	1	Ring Nebula
56	b	Cyg	2.2 N / 3.0 W	GC	9.5	1	
29	g	Cyg	1.7 S / 0.3 E	OC	9.0	12	
39	a	Cyg	3.2 N / 8.5 E	OC	5.5	30	
27	g	Sge	3.2 N / 0.2 E	PN	7.5	8x4	Dumbell Nebula
71	g	Sge	0.7 S / 1.2 W	GC	8.5	6	
11	b	Sct	1.5 S / 1.0 E	OC	7.0	10	
26	prv	---	3.2 S / 1.5 W	OC	9.5	9	
16	g	Sct	0.8 N / 2.5 W	DN		20	Eagle Nebula
17	g	Sct	1.6 S / 2.0 W	DN		20x10	Swan Nebula
18	prv	---	1.0 S / 0.2 W	OC	8.0	12	
24	prv	---	1.3 S / 0.3 W	MWP	4.5	90x60	OC NGC6603 near center
23	prv	---	0.5 S / 5.0 W	OC	6.0	25	
25	g	Sct	4.7 S / 0.6 E	OC	6.5	40	
7	l	Sco	2.3 N / 4.3 E	OC	3.5	60	
6	prv	---	2.6 N / 2.9 W	OC	4.5	25	
28	l	Sgr	0.6 N / 0.7 W	GC	8.5	5	
8	prv	---	0.6 N / 4.6 W	DN		60x35	Lagoon Nebula
20	prv	---	1.3 N / 0.6 W	DN		20	Trifid Nebula
21	prv	---	0.5 N / 0.7 E	OC	7.0	10	
22	l	Sgr	1.5 N / 1.9 E	GC	6.5	17	
69	e	Sgr	2.0 N / 1.5 E	GC	9.0	3	
70	prv	---	----- / 2.7 E	GC	9.0	2	
54	prv	---	1.8 N / 2.6 E	GC	8.5	2	
55	z	Sgr	1.1 S / 8.1 E	GC	7.0	10	
15	e	Peg	2.3 N / 3.5 W	GC	7.5	7	
75	b	Cap	7.1 S / 3.5 W	GC	9.5	2	
72	e	Aqr	3.0 S / 1.4 E	GC	10.0	2	
73	prv	---	0.1 S / 1.4 E	OC	9.0		4 Stars
2	b	Aqr	4.8 N / 0.5 E	GC	7.5	8	
30	g	Cap	6.5 S / -----	GC	8.5	6	

OC=Open Cluster; GC=Globular Cluster; DN=Diffuse Nebula; PN=Planetary Nebula; GX=Galaxy; SR=Supernova Remnant;  
MWP=Milky Way Patch

## Your Daily Dose of Astonishment

By Diane K. Fisher

As a person vitally interested in astronomy, you probably have the Astronomy Picture of the Day website at [apod.nasa.gov](http://apod.nasa.gov) set as favorite link. APOD has been around since practically the beginning of the web. The first APOD appeared unannounced on June 16, 1995. It got 15 hits. The next picture appeared June 20, 1995, and the site has not taken a day off since. Now daily traffic is more like one million hits.

Obviously, someone is responsible for picking, posting, and writing the detailed descriptions for these images. Is it a whole team of people? No. Surprisingly, it is only two men, the same ones who started it and have been doing it ever since.

Robert Nemiroff and Jerry Bonnell shared an office at NASA's Goddard Space Flight Center in the early-90s, when the term "World Wide Web" was unknown, but a software program called Mosaic could connect to and display specially coded content on other computers. The office mates thought "we should do something with this."

Thus was conceived the Astronomy Picture of the Day. Now, in addition to the wildly popular English version, over 25 mirror websites in other languages are maintained independently by volunteers. (See [http://apod.nasa.gov/apod/lib/about\\_apod.html](http://apod.nasa.gov/apod/lib/about_apod.html) for links). An archive of every APOD ever published is at <http://apod.nasa.gov/apod/archivepix.html>. Dr. Nemiroff also maintains a discussion website at <http://asterisk.apod.com/>.

But how does it get done? Do these guys even have day jobs?

Dr. Nemiroff has since moved to Michigan Technological University in Houghton, Michigan, where he is professor of astrophysics, both teaching and doing research. Dr. Bonnell is still with NASA, an astrophysicist with the Compton Gamma Ray Observatory Science Support Center at Goddard. APOD is only a very small part of their responsibilities.

They do not collaborate, but rather divide up the calendar, and each picks the image, writes the description, and includes the links for the days on his own list. The files are queued up for posting by a “robot” each day.

They use the same tools they used at the beginning: Raw HTML code written using the vi text editor in Linux. This simple format has now become such a part of the brand that they would upset all the people and websites and mobile apps that link to their feed if they were to change anything at this point.

Where do they find the images? Candidates are volunteered from large and small observatories, space telescopes (like the Hubble and Spitzer), and independent astronomers and astrophotographers. The good doctors receive ten images for every one they publish on APOD. But, as Dr. Nemiroff emphasizes, being picked or not picked is no reflection on the value of the image. Some of the selections are picked for their quirkiness. Some are videos instead of images. Some have nothing to do with astronomy at all, like the astonishing August 21, 2012, video of a replicating DNA molecule.

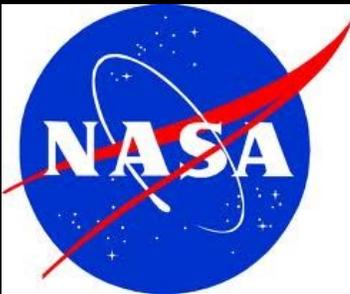
Among the many mobile apps taking advantage of the APOD feed is Space Place Prime, a NASA magazine that updates daily with the best of NASA. It's available free (in iOS only at this time) at the Apple Store.

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.*



Caption:

*The January 20, 2013, Astronomy Picture of the Day is one that might fall into the “quirky” category. The object was found at the bottom of the sea aboard a Greek ship that sank in 80 BCE. It is an Antikythera mechanism, a mechanical computer of an accuracy thought impossible for that era. Its wheels and gears create a portable orrery of the sky that predicts star and planet locations as well as lunar and solar eclipses.*



Editor's Note: Due to a glitch in Publisher that will no longer allow me to put the Space Place Newsletter, a PDF document, into a Publisher Document, I will only be able to provide the web link to it. Here it is, below:



<http://spaceplace.nasa.gov/educator-newsletter/en/>

And For The Young Stargazers:

Check out these fun websites from NASA!

<http://climate.nasa.gov/kids>

<http://scijinks.gov>

<http://spaceplace.nasa.gov>



## Where We Meet:

**TCC Northeast Campus, 3727 E. Apache St., Student Union Bldg. 2, Room 1603**

There is PLENTY of parking, lighting and security on this campus.

To get to TCC NE Campus, take the Harvard Exit off of Hwy. 11 (Gilcrease Expressway). Go south for about 1/2 mile to the campus located at the corner of N. Harvard and Apache. Turn east on Apache and take the entrance in front of Bldg. 3 (the large round building). Then turn right and park in front of Student Union Building #2. Room 1603 is just off of the lobby.

**Google-type driving direction map at <http://www.tulsacc.edu/13273/>**

**We hope to see you there!**



Our next General Meeting will be on Friday, March 29 at 7:00 PM.

## CLUB OFFICERS

PRESIDENT	OWEN GREEN 918-851-8171
VICE PRESIDENT	LEE BICKLE 918-872-8744
SECRETARY	TAMARA GREEN 918-851-1213
TREASURER	JOHN LAND 918-695-3195

## BOARD MEMBERS AT LARGE

STAN DAVIS	<a href="mailto:stan.home@cox.net">stan.home@cox.net</a>
MICHAEL BLAYLOCK	<a href="mailto:quaga53@cox.net">quaga53@cox.net</a>
MANDY NOTHNAGEL	<a href="mailto:sleepinallday@gmail.com">sleepinallday@gmail.com</a>
OPEN	
JODY RAY-FLEETWOOD	<a href="mailto:oubre70@yahoo.com">oubre70@yahoo.com</a>
TONY WHITE	<a href="mailto:tony@astrotulsa.com">tony@astrotulsa.com</a>

## APPOINTED STAFF

NEWSLETTER EDITOR	TAMARA GREEN 918-851-1213
FACILITIES MANAGER	JAMES TAGGERT 918-629-9087
MEMBERSHIP CHAIRMAN	JOHN LAND 918-695-3195
OBSERVING CO-CHAIRS	OWEN & TAMARA GREEN 918-851-1213
GROUP DIRECTOR	JENNIFER JONES 918-629-8732
PR/OUTREACH/SIDEWALK ASTRONOMY	OWEN GREEN 918-851-8171
NIGHT SKY NETWORK	TERESA DAVIS 918-637-1477
WEBMASTER	JENNIFER JONES 918-629-8732
FUNDRAISING CHAIR	OPEN

## MEMBERSHIP INFORMATION

### MEMBERSHIP RATES FOR 2012 WILL BE AS FOLLOWS:

Adults - \$45 per year. Includes Astronomical League membership.

Senior Adults - \$35 per year. *For those aged 65 and older.* Includes Astronomical League membership.

Students - \$30 per year. Includes Astronomical League Membership.

Students - \$25 per year. *Does not include Astronomical League membership.*

The regular membership allows all members of the family to participate in Club events, but only ONE voting membership and ONE Astronomical League membership per family.

Additional Family Membership - \$15 with Astronomy Club of Tulsa voting rights, \$20 with Club voting rights *and* Astronomical League membership.

*THOSE WISHING TO EARN ASTRONOMICAL LEAGUE OBSERVING CERTIFICATES NEED TO HAVE A LEAGUE MEMBERSHIP.*

### MAGAZINES:

Astronomy is \$34 for one year or \$60 for 2 years.

[www.astronomy.com](http://www.astronomy.com)

Sky & Telescope is \$33 per year.

[www.skyandtelescope.com](http://www.skyandtelescope.com)

Sky & Telescope offers a 10% discount on their products.

*If you are an existing S&T subscriber, you can renew directly with S&T at the same Club rate. Both S&T and Astronomy now have digital issues for computers, iPads and smart phones.*

## ONLINE REGISTRATION

We now have an automated online registration form on the website for new memberships, membership renewals and magazine subscriptions. Just simply type in your information and hit "send" to submit the information. You can then print a copy of the form and mail it in with your check. At this time we do not have an option for credit card payment, but we may explore that at a later time.

Link: <http://www.astrotulsa.com/Club/join.asp>



THE ASTRONOMY CLUB OF TULSA INVITES YOU TO  
MAKE PLANS THIS SPRING TO JOIN US AT AN ASTRONOMY CLUB OF TULSA STAR PARTY!  
OPEN TO THE PUBLIC

For more information please visit [www.astrotulsa.com](http://www.astrotulsa.com).



The Observer is a publication by the Astronomy Club of Tulsa. The Astronomy Club of Tulsa is a 501C 3 non-profit organization open to the public. The Club started in 1937 with the single mission to bring the joy and knowledge of astronomy to the community of Tulsa, OK and the surrounding area. Today our mission remains exactly the same. We travel to local schools, churches and many other venues with scopes and people to teach. Our observatory is located in Mounds and many public programs are offered there. To join the Astronomy Club of Tulsa please visit [www.astrotulsa.com](http://www.astrotulsa.com) where you will find all the information necessary to become a member.

